

## Sexual Harassment & Cardiothoracic Surgery - #UsToo?

Running Head: sexual harassment in CT surgery

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## Abstract

**Background.** Fifty-eight percent of women in science, engineering, and medicine report being affected by sexual harassment. We sought to determine the extent of SH in cardiothoracic surgery.

**Methods.** We developed a survey based on the Sexual Experience Questionnaire-Workplace, physician wellness and burnout survey. The survey was open to responses for 45 days and disseminated via the STS, WTS and TSRA listservs. A reminder email was issued at 28 days. Student's t-tests, Fisher's exact, and Chi-square were used to compare results.

**Results.** Of 790 respondents, 75% were male and 82% were attendings. 81% of female surgeons vs. 46% of male attending surgeons experienced SH ( $p < 0.001$ ). SH also was reported by trainees (90% female vs. 32% male,  $p < 0.001$ ). According to women, the most common offenders were supervising leaders and colleagues; for men, it was ancillary staff and colleagues. Respondents reported SH at all levels of training. 75% of women surgeons vs. 51% of men surgeons witnessed a colleague be subjected to SH. 89% of respondents reported the victim as female (male 2%, both 9%,  $p < 0.001$ ). 49% of female witnesses (50% of male witnesses) reported no intervention; <5% of respondents reported the offender to a governing board. SH was positively associated with burnout.

**Conclusions.** Sexual harassment is present in CT surgery among faculty and trainees. While women surgeons are more commonly affected, male surgeons also are subjected to SH. Despite witnessed events, intervention currently is limited. Policies, safeguards, and bystander training should be instituted to decrease these events.

In October 2017, the #MeToo went viral and the movement gained significant momentum over the past year. The movement empowered women to publicly denounce sexual harassment (SH) and sexual assault and the moniker #MeToo was used on social media to demonstrate the widespread prevalence of SH, particularly in the workplace. In 2018 a collaborative study by the National Academies of Sciences, Engineering and Medicine reported SH experienced by 58% of women.<sup>1</sup> More recent studies have demonstrated that men, too, are subject to SH in the field of surgery.<sup>2,3</sup> With this information in mind, we critically examined the discipline of Cardiothoracic Surgery to determine the presence of sexual harassment in our work environment.

## **Material and Methods**

### *Study population*

Following approval from Mayo Clinic's Institutional Review Board (protocol #18-002238), members of the Society of Thoracic Surgeons (STS), Women in Thoracic Surgery (WTS), and Thoracic Surgery Resident Association (TSRA) were contacted via email with a request to respond to an anonymous survey. The survey was open to respondents for 45 days. A reminder email with the survey link was issued 28 days following the distribution of the initial recruitment message. Mention of the survey with encouragement to participate was distributed in *STS Weekly* and an STS social media post.

### *Survey instrument*

The survey was designed to collect basic demographic information (gender, level of training or practice, geographic location of practice). In addition, the survey incorporated

questions from validated survey tools on SH and burn out (Sexual Experience Questionnaire- Workplace, Mayo Clinic burn out questionnaire).<sup>4,5</sup> SH scenarios listed in the survey tool represented one of three forms of SH: gender harassment (e.g., sexist comments, being told sexually crude stories, being exposed to offensive displays), unwanted sexual attention (e.g., leering, attempts at establishing a sexual relationship, repeated requests for drinks), and sexual coercion (e.g., insinuation that sexual cooperation was necessary for professional advancement). Questions regarding the offender, setting, and reaction to SH were also included. The survey was administered on Survey Monkey Ltd.<sup>6</sup>

#### *Statistical Analysis*

Sexual harassment scenarios were reported as yes/no. Scenarios represented gender harassment, unwanted sexual attention or sexual coercion. Responses to burnout questions were on a 5-point Likert-like scale. The Fisher's exact or Chi-square test was used to compare responses with categorical variables. Normality was assessed on questions graded on the 5-point Likert-like scale and subsequently the Pooled or Satterthwaite t-tests were performed based on equality of variances. A stratified analysis was performed to compare results amongst trainees and attendings separately. All statistical analysis was performed using SAS version 9.4 (Cary, NC).

## **Results**

#### *Respondent demographics*

Email communication was delivered to 6,680 members of the STS, WTS, and TSRA. Seven hundred and ninety members responded to the SH questionnaire; their

demographics are outlined in Table 1. Seventy-eight percent of respondents (n=616) reported practicing in North America, with the vast majority from the United States (n=598). Seventy-five percent of respondents were male (n=591), 23% were female (n=185), and 2% were other or elected not to disclose (n=14). The response rates for women and men were 25.7% and 9.9%, respectively (p<0.001). The majority, 94% (n=744), were physicians (4% (n=31) non-physicians; 19% (n=15) undisclosed); 86% (n=637) were attendings in practice and 14% (n=107) were trainees.

Of those who completed training, 83% were male (n=530), 16% were female (n=102), and 0.6% were other (n=4). Faculty self-reported number of years in practice (options were 0-5, 6-10, 11-15, >15years); the percentage of respondents who were female within each group decreased with increasing number of years in practice (45% of respondents 0-5 years versus 9% of respondents >15 years in practice; p<0.0001).

Compared to the attendings, 47% of trainees who responded to the survey were male (n=50) and 53% were female (n=57). Trainees were composed of 10% general surgery residents (n=11), 77% cardiothoracic surgery residents (n=82), and 14% cardiothoracic surgery fellows (n=15).

#### *Experienced sexual harassment*

Eighty-one percent of female attending surgeons (n=86) and 46% of male surgeons (n=242) reported being subject to any form of SH (p<0.0001, Table 2). SH was subcategorized into gender harassment (e.g., sexist comments, being told sexually crude stories, being exposed to offensive displays), unwanted sexual attention (e.g., leering, attempts at establishing a sexual relationship, repeated requests for drinks), and sexual coercion (e.g., insinuation that sexual cooperation was necessary for professional advancement). A higher percent of female than male attending surgeons reported

gender harassment (74% vs. 43%,  $p < 0.0001$ ), unwanted sexual attention (48% vs. 14.5%,  $p < 0.0001$ ), and sexual coercion (19% vs. 2%,  $p < 0.0001$ ).

Events of SH were reported by female attendings to have occurred during all levels of training including medical school (30%), general surgery residency (62%), cardiothoracic residency (46%), cardiothoracic fellowship (38%) and as an attending (72%) [Table 3]. Similarly male attendings reported having experienced SH in all levels of training and work (31% medical school, 48% general surgery residency, 10% cardiothoracic residency, 35% cardiothoracic fellowship, and 81% as an attending 81%).

Women reported a person in leadership directly overseeing their work, a colleague of the same specialty, and a colleague of a different specialty as being the three most common offenders of SH (Table 3). The top three most common settings of such events were in the hospital or clinic, in a one-on-one meeting, or at a regional or national conference. For men ancillary staff and colleagues were the most common offenders; the hospital ward or clinic, outside of the hospital or office, and via texting were the most common settings for SH for men.

#### *Witnessed sexual harassment*

Seventy-one percent of female attending surgeons and 51% of male surgeons reported witnessing SH ( $p < 0.001$ ; Table 2). Sixty-four percent, 42%, and 23% of women surgeons reported witnessing gender harassment, unwanted sexual attention, and sexual coercion compared to 44%, 21%, 7% of men surgeons reported witnessing these events. In witnessed events the victim was most commonly female ( $p < 0.0001$ ). These witnessed events were more common after training and during general surgery residency for both women and men. For both genders, the most common environments

of witnessed events were on the hospital ward or in clinic and outside of the hospital or office.

#### *Response to witnessed events*

Forty-seven percent and 51% of female and male surgeons, respectively, reported no intervention following witnessing SH of a colleague ( $p=NS$ ). Thirty-nine percent of women vs. 20% of men warned other colleagues of the offender's behavior ( $p=0.001$ ). Twelve percent of women vs. 5% of men anonymously reported the witnessed event to a supervisor ( $p=0.04$ ); 13% of women vs. 23% of men pulled the offending colleague aside in private to discuss the witnessed event ( $p=NS$ ); 15% of women and 12% of men immediately intervened and prevented the event from escalating ( $p=NS$ ). Only 4% of men and women reported the offender to a governing board.

#### *Surgical trainees*

Similar to attending surgeons, there was a gender difference in those being subject to SH. Ninety percent of female trainees and 32% of male trainees reported experiencing SH ( $p<0.0001$ ; Table 2). Gender harassment, unwanted sexual attention and sexual coercion were reported by 90% vs. 32% ( $p<0.0001$ ), 53% vs. 4% ( $p<0.0001$ ), and 18% vs. 4% ( $p=0.03$ ), respectively, of female vs. male trainees. Female trainees reported these events occurred most commonly (in decreasing order) as a general surgery resident, medical student, and cardiothoracic resident while male trainees reported these events to occur more commonly as a medical student, general surgery resident, and cardiothoracic resident (Table 3). The most common settings for SH reported by female trainees were in a clinical setting, outside of the hospital, and at a regional or national conference. Male residents reported the most common settings to be in the hospital or outpatient clinic, or outside of the hospital. The most common offenders of SH reported

by female trainees were a person in direct leadership, a colleague of a different specialty, and patient or patient family. For male trainees, the most common offenders were ancillary staff and colleagues (of a different or same specialty).

Trainees reported witnessing SH (86% females and 56% males,  $p < 0.01$ ; Table 2).

Gender harassment, unwanted sexual attention and sexual coercion were witnessed by 77% vs. 42% ( $p < 0.01$ ), 60% vs. 18% ( $p < 0.0001$ ), and 23% vs. 8% ( $p = 0.04$ ), respectively, of female versus male trainees. In witnessed events, the gender of the victim was most commonly female. For both genders, SH was most commonly (in decreasing order) witnessed as a medical student, general surgery resident, and cardiothoracic resident. The witnessed events were most commonly in the clinical setting, at a regional or national conference, and outside of the hospital for female trainees; for male trainees, the witness events were most commonly in the clinical setting or outside of the hospital. Fifty-three percent of female trainees and 50% of male trainees reported no intervention following the witnessed event. Thirty-nine percent of female trainees vs. 11% of male trainees ( $p < 0.01$ ) warned other colleagues to be aware of the offender's behavior. Less than 20% of trainees discussed the event with the offender in private or immediately intervened to prevent the event from escalating; less than 10% of trainees reported the witness event to a supervisor or governing board.

#### *Generational analysis*

We sought to determine whether SH was less reported by younger surgeons (categories were trainees, 0-5, 6-10, 11-15, >15 years in practice). After correcting for gender, there were no differences in reports of sexual coercion and unwanted sexual attention across the years in practice. Gender harassment was less reported among faculty 11-15 years in practice (OR 0.5 [0.2, 0.9],  $p < 0.047$ ), but similar for all other categories.



*Burn out and satisfaction score*

In response to the statement “*I have declined a job or left a job due to my experiences of sexual harassment*” men scored a mean of  $1.5 \pm 0.8$  on a 1-5 Likert scale while women scored a mean of  $2.8 \pm 1.4$  ( $p < 0.001$ ; Figure 1). Men scored a mean of  $3.4 \pm 1.0$  vs. women who scored a mean of  $2.6 \pm 1.2$  ( $p < 0.001$ ) in agreement with the statement “*Cardiothoracic Surgery is a healthy and positive environment for women.*” When asked about burnout, women surgeons (attending and trainees) scored a mean of  $3.3 \pm 1.2$  as compared to men surgeons who scored  $2.9 \pm 1.3$  ( $p = 0.001$ ). In response to feeling more callous about work, women scored a mean of  $2.9 \pm 1.3$  vs. men who scored  $2.4 \pm 1.2$  ( $p < 0.001$ ). However, men’s and women’s responses were more similar with respect to whether they would pursue a career in Cardiothoracic Surgery if given the option again ( $3.9 \pm 1.1$  women vs.  $4.1 \pm 1.1$  men,  $p = 0.01$ ).

In a multiple linear regression model, both gender ( $p = 0.04$ ) and experiencing SH ( $p = 0.006$ ) were associated with burnout and increased likelihood of declining or leaving a job.

**Comment**

Sexual harassment is a form of gender-based violence; it violates a person’s rights, harms their health, and damages careers.<sup>7,8</sup> Several studies have demonstrated that victims—regardless of gender—who are subjected to SH suffer from anxiety, depression, and post-traumatic stress disorder.<sup>8,9</sup> Moreover, these symptoms translate into damaged team dynamics, decreased job satisfaction and decreased productivity at the workplace. This dissatisfaction all too often results in victims leaving their positions, institutions, and sometimes even their profession.

We have demonstrated that SH is present in cardiothoracic surgery and that it affects both genders. Moreover, the rates of SH in our study (81% of women and 46% of men) are higher than those reported in prior studies. In an abstract presented at the Academic Surgical Congress, 58% of women and 25% of men surgeons experienced sexual harassment within the past 12-month period.<sup>3</sup> Additionally, in a study on the barriers to reporting SH among surgical trainees, 70.8% of female and 30.8% of male trainees were subject to SH.<sup>2</sup> While the incidence of SH reported by these studies are alarmingly high, possible explanations for cardiothoracic surgery's heightened rate of SH include the male dominance of cardiothoracic surgery (93% of currently practicing cardiothoracic surgeons are male), and the length of and intensity (long hospital hours) of training. Additionally, our survey was worded to include incidences of SH within the past ten years (as opposed to the past 12 months in Ayyar, *et al's* study). Our generational analysis, however, did not suggest that SH decreased among younger generations. Furthermore, if these SH rates are accurate, studies are warranted in order to determine the root cause of this high rate of SH in cardiothoracic surgery.

It is worth noting that, similar to prior studies on SH, the majority of SH is in the form of gender harassment. Seventy-four percent of women (43% men) reported SH in the form of gender harassment, compared to unwanted sexual attention in 48% of women (14.5% men) and sexual coercion in 19% of women (2% of men). Similarly, Freedman-Weiss, *et al* reported 50-70% gender harassment or sexually explicit comments/jokes, 8-38% unwanted sexual attention, and <5% sexual coercion among surgical trainees.<sup>2</sup> Additionally, Nayyar, *et al* presented at the ASC that 53% gender harassment, 23% unwanted sexual attention or physical contact among female surgeons.<sup>3</sup> Barriers to reporting SH in Freedman-Weiss, *et al's* study included "feeling uncertain if the behavior qualified as SH" and the belief that the incident of SH was harmless. Likely, these two

barriers relate to gender harassment, which emphasizes the importance of noting that gender harassment is included in the definition of SH and should, similarly, not be tolerated.

An unexpected finding of this study was the high prevalence of SH experienced by male surgeons (46%). SH is not a women-only phenomenon. In a national study of the US population 43% of men reported victimization in the form of sexual harassment.<sup>10</sup> Similarly, Nayar, *et al* reported SH in 25% of male attending surgeons and Freedman-Weiss, *et al* reported SH in 30.8% of male trainees.<sup>2,3</sup> Moreover, our study reported SH of men to be most commonly from ancillary staff (whereas in women the offender was most often a person of direct leadership). SH of male cardiothoracic surgeons should be addressed by our discipline equally as seriously as SH of women cardiothoracic surgeons and such an effort would include hospital-wide and university-wide policies that transcend disciplines.

Most concerning is that these acts of aggression are not limited to the attending staff, but are also reported by trainees with transgressions occurring as early as medical school; and that SH in cardiothoracic surgery is under-reported (as it is in other disciplines).<sup>2,3</sup> Whether these events are personal experience or being witnessed, the lack of reporting results in an inability to stop harassment from recurring.

It is time to take action and adopt a zero tolerance policy on SH. Our study echoes others in demonstrating that SH is related to burn-out and an increased likelihood of declining a job opportunity or of leaving a job. Previously, several studies have shown that victims of SH have decreased psychological, physical, and professional health.<sup>1</sup> Victims of SH report increased anxiety, depression, angst and use of prescription medications. There is also an indirect association between SH and a decline in physical

health (nausea, headaches, exhaustion, weight loss/gain, musculoskeletal pain). The professional toll SH takes can be in the form of loss of confidence, decreased job satisfaction, organizational withdrawal and, ultimately, reduced job performance. Impairment of professional performance can also translate to worse patient care; and, from a leadership standpoint, decreased job satisfaction and organizational withdrawal often results in the loss of talent.

We cannot thrive as a profession if women and men do not feel safe and free of aggression and violence in the workplace. Education on what behaviors constitute SH—including not only unwanted sexual attention and sexual coercion but also gender harassment—is paramount and should be mandatory in all workplaces (practices, hospitals, universities). Safeguards ought to be instituted to discourage and prevent SH. For instance, at annual meetings the American Astronomical Society has an informal list of emergency allies who can be texted to assist—in a subtle manner—in escorting women who find themselves in vulnerable situations.<sup>11</sup> The American Association for the Advancement of Science recently included in their code of conduct the right to remove and prohibit future attendance of individuals from annual meeting.<sup>12</sup> Universities and hospitals should institute policies and have significant penalties for offenders of SH. Most importantly, a reliable and safe infrastructure for the reporting of SH must be established. Anonymous reporting systems to hospitals and professional governing boards can be established in order to facilitate reporting in the manner that “sentinel events” are reported in a health care system. Victims of SH, regardless of gender, face marginalization, stigmatization and retaliation.<sup>10,13</sup> Focus should be placed on abolishing deterrents to reporting SH and developing a mechanism of reporting free of backlash. Moreover, witnesses—both male and female—need to engage in intervention and SH

reporting. As a profession, we must hold ourselves to a high standard of morals and feel comfortable policing each other.

By no means are the authors suggesting the tarnishing reputations or public takedowns of offenders. Despite the sensitive nature of this topic, instituting policies to prevent SH can be accomplished in a professional manner with the utmost decorum. The gravity of any report of SH must be acknowledged; each report ought to be critically reviewed and investigated. Additionally, we should equally adopt a zero tolerance policy for false accusations.

We acknowledge the limitations to our study. As with all voluntary survey studies, a low response rate (25.7% of women and 9.9% of men) may be a source of concern. The response to this survey was the second highest of all surveys thus far sponsored by the STS (personal communication). Additionally, our response rate is on par to the response rate of other SH studies in surgery.<sup>3</sup> Perhaps given the sensitive nature of this topic a low response rate is expected. The authors also acknowledge that the rate of SH are possibly elevated due to response bias. Those who experience SH may be more inclined to respond to a survey on this topic than those who have not experienced SH. Moreover, the authors acknowledge a drop off in responses to the questions on the more granular details of the contexts in which SH has occurred. The purpose of this study was not to dissect out every detail and instance of SH, but rather, to take the first step toward ending SH. Eradicating SH begins with acknowledging that SH is present in the discipline of cardiothoracic surgery and describing the magnitude of the problem. Armed with this information, we can initiate a dialogue on addressing the problem, affirm that the presence of SH is unacceptable, and establish that, as a discipline moving forward, we must develop a culture that will not tolerate SH.

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Table 1. Demographics of respondents to the SH survey.

		<b>Female</b>	<b>Male</b>
Location of Practice (n=768)	North America		
	Canada	2	10
	United States	164	429
	Mexico	0	6
	South America	4	17
	Europe	8	32
	Africa	0	4
	Asia	4	29
	Oceania	0	3
	Retired	3	41
	Other	2	10
Level of practice (n=774)	Trainee	57	50
	Faculty	106	530
	Non-physician	25	6
Years in practice (faculty only; n=641)	0-5	33	41
	6-10	19	40
	11-15	13	56
	>15	41	393

Table 2. Sexual harassment occurrences.

	<b>Female (n=102)</b>	<b>Faculty Male (n=530)</b>	<b>p-value</b>	<b>Female (n=57)</b>	<b>Trainee Male (n=50)</b>	<b>p-value</b>
<b>Experienced</b>						
<b>Any</b>	81.1%	45.7%	<0.001	89.5%	32.0%	<0.001
<b>Gender harassment</b>	73.6%	43.2%	<0.001	89.5%	32.0%	<0.001
<b>Unwanted sexual attention</b>	48.1%	14.5%	<0.001	52.6%	4.0%	<0.001
<b>Sexual coercion</b>	18.9%	2.1%	<0.001	17.5%	4.0%	0.03
<b>No to all</b>	18.9%	54.3%	<0.001	10.5%	68.0%	<0.001
<b>Witnessed</b>						
<b>Any</b>	70.8%	50.8%	<0.001	86.0%	56.0%	<0.001
<b>Gender harassment</b>	64.2%	44.3%	<0.001	77.2%	42.0%	<0.001
<b>Unwanted sexual attention</b>	42.4%	20.6%	<0.001	59.6%	18.0%	<0.001
<b>Sexual coercion</b>	22.6%	6.6%	<0.001	22.8%	8.0%	0.04
<b>No to all</b>	29.2%	49.2%	<0.001	14.0%	44.0%	<0.001



Table 3. Sexual harassment context

	Attending (n=328)		Trainee (n=67)	
	Female	Male	Female	Male
<b>Perpetrator</b>	1. person in direct leadership (69%) 2. colleague of same specialty (43%) 3. colleague of different specialty (34%) 4. person not in direct leadership (33%) 5. ancillary staff (27%)	1. ancillary staff (60%) 2. colleague of same specialty (39%) 3. colleague of different specialty (38%) 4. patient or family member (18%) 5. person in direct leadership (12%)	1. person in direct leadership (71%) 2. colleague of different specialty (53%) 3. patient or family (43%) 4. person not in direct leadership (41%) 5. colleague of same specialty (33%)	1. ancillary staff (50%) 2. colleague of different specialty (38%) 3. colleague of same specialty (31%) 4. person in direct leadership (25%) 5. patient or family (12%) person not in direct leadership (12%)
<b>Setting</b>	1. hospital ward or outpatient clinic (80%) 2. one-on-one meeting (36%) 3. regional or national conference (30%) 4. divisional or departmental meeting (28%) 5. outside of hospital or clinic (24%)	1. hospital ward or outpatient clinic (72%) 2. outside of hospital or clinic (35%) 3. mobile texts (15%) 4. regional or national conference (12%) 5. one-on-one meeting (10%)	1. hospital ward or outpatient clinic (90%) 2. outside of hospital or clinic (35%) 3. mobile texts (26%) 4. regional or national conference (24%) 5. one-on-one meeting (18%) divisional or departmental meeting (18%)	1. hospital ward or outpatient clinic (69%) 2. outside of hospital or clinic (19%) 3. other (19%) 3. regional or national conference (12%) 4. mobile texts (6%) regional or national conference one-on-one meeting (6%)
<b>Level of training at time of event</b>	1. as an attending (72%) 2. as a GSU resident (62%) 3. as a CT resident (46%)	1. as an attending (81%) 2. as a GSU resident (48%) 3. as a CT resident (40%)	1. as a GSU resident (63%) 2. as a medical student (45%) 3. as a CT resident (41%)	1. as a medical student (62%) 2. as a GSU resident (56%) 3. as a CT resident (38%)

4. as a CT fellow (38%)	4. as a CT fellow (35%)	4. as a CT fellow (27%)	4. as a CT fellow (12%)
5. as a medical student (30%)	5. as a medical student (31%)		

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**Figure Legend**

Figure 1. Physician well being and burnout.

Appendix 1. Sexual harassment questionnaire.

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